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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/642,929	08/18/2003	Kenji Sakai	2281.2.15	3856

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EXAMINER

GOUDREAU, GEORGE A

ART UNIT PAPER NUMBER

1763

DATE MAILED: 02/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/642,929

Applicant(s)

SAKAI ET AL.

Examiner

George A. Goudreau

Art Unit

1763

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2005.
- 2a) ☒ This action is **FINAL** 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 2-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-4 and 7-10 is/are allowed.
- 6) ☒ Claim(s) 5-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

George Goudreau  
GEORGE GOUDREAU  
PRIMARY EXAMINER  
2-06'

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Art Unit: 1763

1. Applicant's arguments with respect to claims of record have been considered but are moot in view of the new ground(s) of rejection.
2. Claims 2-4, and 7-10 are allowed.
3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 5-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Tsai et. al. (6,524,167).

Tsai et. al. disclose a process for forming a Cu damascene structure on the surface of a wafer. A damascene hole in an insulating layer on the surface of a wafer is filled with a Cu layer, and a Ta barrier layer. The Cu layer, and the Ta barrier layer are then cmp polished using a cmp slurry, which is comprised of the following components:

-H<sub>2</sub>O;

-abrasive particules (i.e.-silica, alumina, etc.) ;

-an anticorrosive agent (i.e.-BTA, etc.);

-a pH-adjusting agent (i.e.-potassium hydroxide, phosphoric acid, acetic acid, etc.);

-H<sub>2</sub>O<sub>2</sub>; and

-a chelating agent (i.e.-polishing accelerator such as glycine, etc.)

This is discussed specifically in columns 9-12; and is discussed in general in columns 1-12. This is shown in figures 1-4.

The process taught above could be considered a three-step process in which the first step, the second step, and the third step are all the same. Thus, all of applicant's claimed limitations are fully met in these regards.

5. Claims 5-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Asano et. al. (6,679,929).

Asano et. al. disclose a process for forming a Cu damascene structure on the surface of a wafer. A damascene hole in an insulating layer on the surface of a wafer is filled with a Cu layer, and a Ta barrier layer. The Cu layer, and the Ta barrier layer are then cmp polished using a cmp slurry, which is comprised of the following components:

-H<sub>2</sub>O;

-abrasive particules (i.e.-silica, alumina, etc.) ;

-an anticorrosive agent (i.e.-BTA, etc.);

-H<sub>2</sub>O<sub>2</sub>; and

-a polishing accelerator (i.e.-citric acid, oxalic acid, tartaric acid, glycine, etc.)

This is discussed specifically in columns 1-3; and is discussed in general in columns 1-14.


The process taught above could be considered a three-step process in which the first step, the second step, and the third step are all the same. Thus, all of applicant's claimed limitations are fully met in these regards.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication should be directed to examiner

George A. Goudreau at telephone number (571)-272-1434.

  
George A. Goudreau  
Primary Examiner  
Art Unit 1763